



ecology and environment, inc.

108 SOUTH WASHINGTON, SUITE 302, SEATTLE, WASHINGTON 98104, TEL. 206-624-9537

International Specialists in the Environmental Sciences

PROPOSED WORKPLAN -
INSTALLATION OF GROUNDWATER
MONITORING WELLS AND
SAMPLING AT THE GREENACRES
LANDFILL SITE
SPOKANE, WASHINGTON

TDD R10-8408-44

*Draft 1
Reviewed by Rff*

**DRAFT REPORT
FOR AGENCY REVIEW ONLY
DO NOT DUPLICATE**

Report Prepared By: John Roland, Lazar Gorelik

Draft Report Date: October, 1984

Submitted To: J.E. Osborn, Regional Project Officer
Field Operations and Technical Support Branch
U.S. Environmental Protection Agency
Region X
Seattle, Washington

Jack - FYI - 11/8/84.

Rene has several
copies for review &
~~distribution~~ (Barry also
has copy for QA concerns)
John

Rene please 11/8
review this & then
get copies to who ever
you feel is appropriate.
(I have given Barry a copy
for QA review - he will
get comments to you). John.

DO NOT DUPLICATE
FOR VRECA BEAVER ONTA
DUPLICATE REPORT

Scenarios

- p.1 2nd para.
- p.3 source of info?
- p.5 stainless steel construction?
- p.5? map should show land ownership
- p.5 water quality limits? ~~Good~~
- More updated references?

isotopic

- p8 source of table?
- p9 R needs explanation
- table 2 " "

p11 3rd para.

p15 field tests?

p15 extra tanks

p16 what if we hit boulder
and soft sand? Need to
change casing size? Drilling
method

~~p16 log data could not be described~~

p18 Grundfos pump?

~~1940 Bureau~~

p18 access hole for measurement
not sufficient

Missing - no info on
leveling top of Casings
to determine water gradient



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M E M O R A N D U M

DATE: November 7, 1984

TO: John E. Osborn, RPO
EPA Region X

THRU: Dave Buecker, RPM
E&E, Seattle *DB*

FROM: John Roland *JR*
E&E, Seattle

SUBJ: Proposed Workplan - Installation of Groundwater
Monitoring Wells and Sampling at the Greenacres
Landfill Site, Spokane, Washington

REF: TDD R10-8408-44

Enclosed are six copies of the proposed workplan for the Greenacres Landfill Site for review. Please distribute as necessary.

JR:jg



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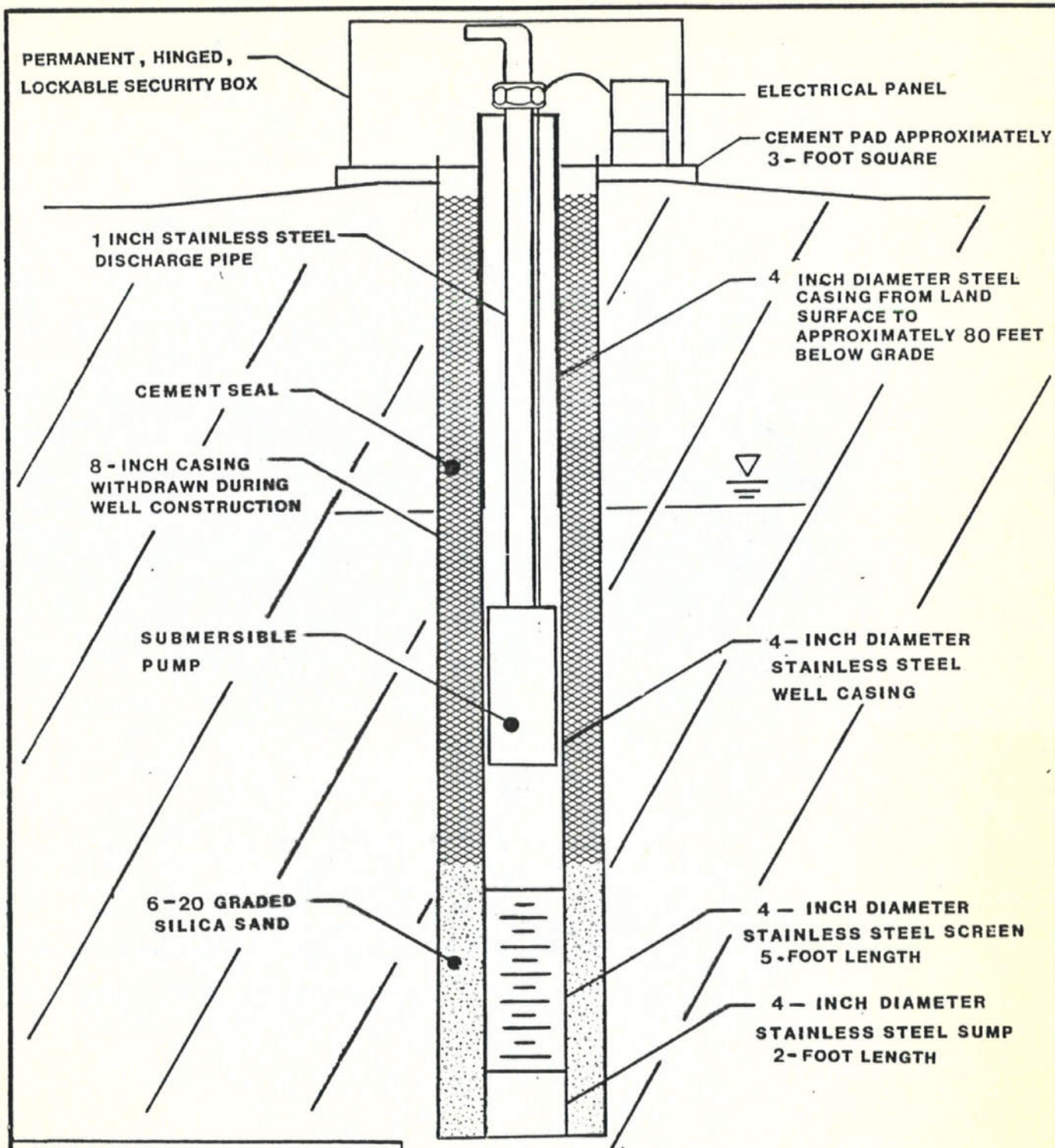
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COMMENTS

1. PAGE 5⁺ THIS PLAN SHOULD
DEPICT LAND ~~AND~~ OWNERSHIP
~~AND~~ AROUND THE SITE AND
AT THE SITE OF THE PROPOSED
WELLS - ~~HAS BEEN OBTAINED~~
~~PERMISSION TO DRILL FOR~~
- 2 P. 18 What's this 91 HP pump
3. Without a ~~tape~~ tube extending
down the well to measure water level,
the well will soon be so full of tapes
that you may have trouble pulling the
pump. PUT A ~~1~~ 3/4" TUBE
DOWN TO THE PUMP.



FIELD INVESTIGATIONS OF UNCONTROLLED
HAZARDOUS WASTE SITES
TASK REPORT TO THE E.P.A.

TITLE:

PROPOSED WELL CONSTRUCTION
DETAILS FOR GREENACRE LANDFILL

T.D.D. R10-8408-44

ecology and environment, inc.
SEATTLE, WASHINGTON

Date 10-84 Drawn by RB Scale NONE

FIGURE 3

The capability of PVC to leach VOCs in levels significantly higher than those found in the (b) (6) well has been documented in at least one source (20). ✓

Once the actual borehole has been drilled and sampled, a zone will be selected for screening. After the screen and casing are installed clean, graded (6-20) silica sand will be emplaced from the bottom of the zone to be monitored to a minimum height of two feet above the top of the screen. Any open hole extending below the screened zone will also be filled with gravel pack material and/or plugged with cement depending on the lithologic conditions encountered. ✓

Immediately on top of the gravel pack a minimum two foot in depth cap of clean, fine grained, silica sand will be set. This cap should prevent any cement from entering through the top of the gravel pack. ✓

Cementing operations will be conducted through a tremie or grout pipe initially set to a depth of within 10 feet of the top of the gravel pack. After cementing procedures begin the tremie pipe will be successively raised as the 8-inch steel casing is pulled back to insure a uniform seal from top to bottom. All fluids displaced while cementing will also be contained for testing to determine the required disposal methods.

9.5 Well Development

Surging or pumping or a combination thereof will be used to develop the wells to achieve maximum flow. The contractor shall furnish a pump with a minimum capacity of 50 gallons per minute and all other necessary pipe, hoses and fittings required for development. The wells will be developed to a sand free condition. Development time will be determined by the E&E project geologist.

9.6 Pump Installation

Pump installation shall be performed by a qualified pump installer under the guidance of the project geologist. A constant discharge rate stainless-steel submersible pump will be installed according to the appropriate depth specifications. Installation should allow for removal and adjustment of height. The pumps installed in the deepest wells will have a minimum capacity of 10-12 gpm at 200 feet of head. A Grundfos SP2-18 or similar pump with 91.0 horsepower motor is recommended. For other wells a Grundfos SP2-10 or SP2-12 or similar pump will be used. A minimum 3/4 inch diameter water level access hole will be left in the plate or cover on top of the casing. *not sufficient*

An electric outlet for a 220 volt generator to drive the pump will be installed near the wellhead beneath the lockable steel cover. All electrical wiring will meet applicable local safety codes.